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Appl. No.: 10/723,803
Amdt. Dated: 09/05/2006
Off. Act. Dated: 06/02/2006

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. Rejection of Claims 1-3, 5-10, 12-17 and 19-21 under 35 U.S.C. § 102(e).

Claims 1-3, 5-10, 12-17 and 19-21 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Siwinski (U.S. 2002/0180723). These rejections have been overcome in part and traversed in part as follows.

The Siwinski reference is directed to a method of saving power in an organic electroluminescent display. Siwinski discloses a method of reducing the power consumed by the display by "converting a color digital image to be displayed on the display to a monochrome image, and displaying the monochrome image." (see Abstract, emphasis added). This is accomplished by "turning off the less efficient color channels," e.g. signals to pixels having the color components of blue and red, and displaying the image in the channel having the most efficient channel, e.g. green. (see paragraph [0008]). In other words, this device switches from "a full power, full color mode to a low power monocrome mode" (see paragraph [0012], see also paragraph [0014]:

> "This low power monocrome mode can be achieved by converting the full color RGB image to a luminance only gray scale image as described above in the digital image processor 42, and displaying that monochrome image on the green light emitting elements (only) of the OLED display 10. The inefficient red and blue light emitting elements would all be turned off, and the image would be displayed on the efficient green light emitting elements").

Thus, the power saving mode of the Siwinski device converts all colors of the RGB image to a single color, e.g. green, and uses a luminance only gray scale to differentiate features (e.g. text from background) in the image. This is further evidenced in paragraphs [0011] - [0012] and Equation (1), which describe converting a

color image to a monochrome image by producing a "gray scale luminance value" as a function of the weighted amounts of red, green and blue in the original image. FIG. 2 further illustrates this conversion, as the signal to the red and blue pixels are crossed out, showing only one color channel (green) being displayed in the power saving mode.

By contrast to Siwinski, the apparatus and methods of the present invention, as described by the Applicant, are configured to switch or convert a plurality of selected normal mode colors to a plurality of power saving mode colors (see FIG. 3, and associated text in paragraphs [0025] to [0027]). This is an important aspect of the invention, as it allows for the display to maintain the contrast, clarity, and aesthetic features that a 3-color (e.g. RGB) image provides as opposed to a monochrome image. This feature is clearly described throughout the specification; for instance, paragraphs [0010]-[0013] and FIGS. 2, 4, and 5 also describe use of multiple power saving mode colors.

Page 2 of the present Office Action, dated June 2, 2006, asserts that Siwinski discloses "providing a plurality of power saving mode colors (see Fig. 2)." However, FIG. 2 and the test of Siwinski clearly show that only one color is present (i.e. the display is monochromatic) in the power saving mode. As shown in FIG. 2, the signal from the red pixels 12, green pixels 14 and blue pixels 16 are applied weights (24, 26, and 28) and summed up to produce gray scale luminescence values in one color (e.g. green) (see also paragraph [0011]). In addition, FIG. 2 clearly shows that the red pixel 18 and blue pixel 22 signals are deliberately removed from the OLED display 10 output (shown as crossed out), leaving only one channel to remain (green). The red and green components are removed from the RGB (Red-Green-Blue) signal, because they generally draw a higher power consumption (see paragraph [0008]). Thus, it is not possible for the Siwinski device to have more than one power saving mode color output to the display.

It should also be noted that the varying values of gray scale luminance that are

output to the display in the Siwinski power-saving mode are not different colors. The term 'luminance' is general defined as the intensity of light per unit are of source (e.g. pixel). Therefore, "grey scale luminance", as used in Siwinski, merely describes an image having shades, or varying values of light intensity, of the same color (e.g. green).

The Office Action further asserts that Siwinski discloses "each power saving mode color is assigned to a normal mode color (see [0011-0012] at page 1)." Applicant strongly disagrees with this statement. Siwinski, and particularly paragraphs [0011-0012], clearly shows that no color is "assigned" to a normal mode color, as this would result in a solid color display with no contrast (because by definition, there is only one color in a monochromatic display). Rather, Siwinski teaches using the RGB data from each "channel" (e.g. the "red" channel, "blue" channel, and "green" channel for each pixel), applying a weight to each channel, and summing those channels (Eq. (1), Fig.2) to obtain a luminance value that is used to "drive one of the channels (e.g. the green channel)" for that pixel on the display. Thus, no "power saving mode color" is ever "assigned" to a "normal mode color," but rather a gray scale luminance value is automatically sent to the "green channel" based on the value produced from Equation (1).

a. Claim 1

The elements of Claim 1, in its original form (e.g. a "plurality of power saving mode colors...each normal mode color assigned to a power saving mode color"), are not taught nor suggested in the Siwinski reference for at least the reasons stated above. However, to expedite prosecution of the present application, Applicant has amended Claim 1 with further refinements. These amendments are made without waiver or estoppel of subsequent prosecution of claims of a scope which comports to the original claims.

Amended Claim 1 recites, among other elements, a processor configured to provide first and second normal mode colors and first and second power saving mode

colors for output on a display, wherein the first and second power saving mode colors are different from each other and the first and second normal mode colors. Claim 1 further recites that the processor is configured to assign the first power saving mode color the first normal mode color, and the second power saving mode color to the second normal mode color. Furthermore, during a power saving display mode, the processor is configured to switch the first normal mode color with the assigned first power saving mode color and the second normal mode color with the assigned second power saving mode color such that the first and second power saving mode colors are displayed in place of the first and second normal mode colors. Support for the above amendments can be found with reference to FIGS. 3 and 4, and the associated text in paragraphs [0025] to [0029] of the original Application.

First, Siwinski fails to teach or suggest "providing first and second power saving mode colors for output on a display." As explained above, Siwinski merely describes a power saving mode that outputs a monochromatic image. Since the power saving mode can only output in one color, it is thus is incapable of providing first and second power saving mode colors. In addition, Siwinski is void of any discussion other than a monochromatic (e.g. green color) power saving mode. This is not surprising, as any output from either the red and blue channels (which consume power at higher rates) in the power saving mode would be contrary to the process by which the method in Siwinski conserves power.

Secondly, Siwinski fails to teach or suggest a processor is configured to assign first and second power saving mode colors to respective first and second normal mode colors. As explained above no "power saving mode color" is ever "assigned" to a "normal mode color" in the Siwinski reference. Rather Siwinski operates on a completely different principle by generating a gray scale luminance value based on the weighing the red, green and blue channels of a pixel according to Equation (1), and

automatically sending this value via only the "green channel" to represent the value for that pixel.

Finally, Siwinski is absent any discussion of first and second power saving mode colors being displayed in place of the first and second normal mode colors. As explained above, the power saving mode Siwinski is monochromatic, and thus is incapable of displaying multiple colors in the power saving mode.

For the foregoing reasons, Siwinski fails to show all the recited elements of Claim 1. Therefore, the rejection of claim 1 under is improper and should be removed.

b. Claims 2-7

In view of the above discussion, dependent Claims 2-7 should be considered *a fortiori* allowable. It should be considered, however, that many of these claims recite further patentable aspects. A few of these are briefly described below by way of example.

Amended dependent Claim 2 recites a processor configured to provide a third normal mode color for output on said display, wherein the third normal mode color is reversed during the power saving display mode instead of having an assigned power saving mode color. Page 2 of the Office action asserts that Siwinski "discloses each normal mode color (e.g. red and blue) not having an assigned power saving mode color is reversed (e.g. to a black color) during a power saving display mode." Applicant questions the validity of the above statement on a number of grounds. First, Applicant was unable to find any discussion even remotely similar to the above statement in the Siwinski reference, and the Examiner fails to cite any portion of the Siwinski reference evidencing such disclosure. Furthermore, reversal of a color in the power display mode is not possible in the device described in Siwinski. To reverse an RGB color (e.g. generate a color negative), the red, blue, and green components are all used to generate the opposite color on the RGB color spectrum. This requires a value for all RGB components. Because Siwinski only teaches conversion to gray scale

monochrome display, only one component value (e.g. green) is available, and thus reversal of the color is not possible.

Amended dependent claim 3 recites a processor is configured to allow a user to assign each power saving mode color to a corresponding normal mode color. Page 2 of the Office action asserts that Siwinski "discloses a user can assign each power saving mode color to a normal mode color (e.g. assigning weight portion of each of the intensities of the red, green and blue components of the image; see formula (1) between [0011] and [0012] at page 1)." As explained above, the Siwinski device is incapable of assigning a power saving mode color to a normal color. Furthermore, the "formula (1)" cited by the Examiner, and accompanying text, actually teach away from user assignability, because that equation is applied automatically to all colors to be output to the display, with no possibility for a user to manipulate the conversion process.

Amended claim 5 recites, among other elements, first and second power saving mode colors that are capable of having different values for each of the red, blue and green components. Support for the above amendments can be found with reference to FIG. 4 of the original Application. As explained above, Siwinski is incapable of providing multiple power saving mode colors. Furthermore, because only one component value is permitted in the power saving mode, different values for each of the red, blue and green components is impossible in Siwinski.

Amended claim 6 recites, among other elements, first and second normal mode colors and the first and second power saving mode colors each having hue, saturation and lumninance components, wherein the hue, saturation and illumination components can be varied between each of the power saving mode colors. Variation of hue and saturation components is not taught nor suggested in Siwinski.

c. Claim 8

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Amended independent Claim 8 recites, among other elements, providing a plurality of power saving mode colors, each power saving mode color comprising different colors, assigning each power saving mode color to a normal mode color, and switching each normal mode color having an assigned power saving mode color to the assigned power saving mode color. As explained above, the Siwinski device is incapable of providing plurality of power saving mode colors, nor is it capable of assigning each power saving mode color to a normal mode color. Therefore, for many of the reasons explained above for Claim 1, Claim 8 is allowable over the cited references, and its rejection should be removed.

d. Claims 9-12

Because dependent claims 9-13 depend from allowable Claim 8, their rejection is now moot. However, Claims 9-13 also recite additional limitations not found in the cited art. Therefore, for many of the reasons explained above for Claims 2-7, Claims 9-13 are in condition for allowance.

e. Claim 14

Amended independent Claim 14 recites, among other elements, providing a plurality of power saving mode colors for output on a display, wherein the display is switchable between a normal display mode in which the normal mode colors are displayed and a power saving display mode in which the power saving mode colors are displayed in place of the normal mode colors. As explained above, the Siwinski device is incapable of providing plurality of power saving mode colors, nor is it capable of switching power saving mode colors in place of the normal mode colors. Therefore, for many of the reasons explained above for Claim 1, Claim 14 is allowable over the cited references, and its rejection should be removed.

f. Claims 15-21

Because dependent claims 15-21 depend from allowable Claim 14, their rejection is now moot. However, Claims 15-21 also recite additional limitations not

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found in the cited art. Therefore, for many of the reasons explained above for Claims 15-21 are in condition for allowance.

2. Rejection of Claims 4, 11 and 18 under 35 U.S.C. § 103(a).

The Examiner has rejected Claims 4, 11, and 18 as being unpatentable over Siwinski in view of a publication to Kimoto et al. (U.S. No. 6,054,981).

The above claims are dependent claims within the instant application. The Applicant contends that these claims should be considered *a fortiori* allowable in view of the traversal of the rejection of the associated independent claims.

Generally, Applicants note that the present rejection does not establish *prima facie* obviousness under 35 U.S.C. §103(a) and M.P.E.P. §§2142-2143. Firstly, the present Office Action has not established that the prior art references, alone or in combination, teach or suggest all of the claim limitations. M.P.E.P. §§2143.02; *In re Royka*, 180 U.S.P.Q 580 (CCPA 1974).

Applicant fails to identify even a remote teaching or suggestion in either of the Siwinski or Kimoto et al. references for a the power saving indicator showing the reduction in energy consumed by the display when in the power saving display mode, as recited in Claims 4, 11, and 18. As indicated in page 3 of the Office Action, Siwinski fails to disclose a "power saving indicator." Furthermore, the "power saving indicator 34" of Kimoto et al. merely shows an LED that flashes between green and orange color (see FIG. 2). Therefore, this indicator is incapable of showing a reduction in energy consumed by the display. Furthermore, the indicator in Kimoto et al., as shown in FIG. 3 and described in col. 4, lines 46-48, only shows the power mode the device is in, not reduction in energy consumed by the display when in such a mode.

In addition to the above, claims 4, 11, and 18 also recite additional elements not taught or suggested in either of the cited art references. For example claim 4 recites a power saving indicator configured to appear on the display. Since the indicator of Kimoto et al. is a separate LED, it is not shown on the display.

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Secondly, no suggestion or motivation, either in the cited references or in the knowledge generally available to one of ordinary skill in the art, has been cited in the Office Action for the proposed combination of the reference teachings so as to produce the claimed invention. M.P E.P. §§2143.01; *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). A person skilled in the art would not be motivated to include the LED power mode indicator of Kimoto et al. with the device of Siwinski, because it would be readily apparent to the user of the Siwinski device that the a power saving mode was being used as the monochromatic screen (e.g. green) is an obvious and perceptible indicator in itself of the present "power mode."

3. Amendments Made Without Prejudice or Estoppel.

Notwithstanding the amendments made and accompanying traversing remarks provided above, Applicants have made these amendments in order expedite allowance of the currently pending subject matter. However, Applicants do not acquiesce in the original ground for rejection with respect to the original form of these claims. These amendments have been made without any prejudice, waiver, or estoppel, and without forfeiture or dedication to the public, with respect to the original subject matter of the claims as originally filed or in their form immediately preceding these amendments. Applicants reserve the right to pursue the original scope of these claims in the future, such as through continuation practice for example.

4. Conclusion.

Based on the foregoing, Applicants respectfully request that the various grounds for rejection in the Office Action be reconsidered and withdrawn with respect to the presently amended form of the claims.

In the event any further matters remain at issue with respect to the present Application, Applicants respectfully request that the Examiner please contact the undersigned below at the telephone number indicated in order to discuss such matter prior to the next action on the merits of this Application.

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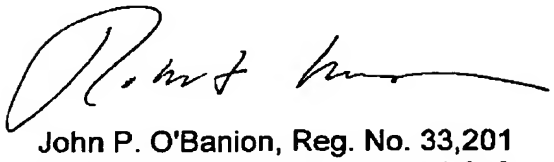
Respectfully submitted,



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